REMARKS

A. The Obviousness Rejection Of Claims 1, 3-14, 20, 21, 23 And 24

On page 2 of the Office Action, claims 1, 3-14, 20, 21, 23 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Elers in view of Norman and Rangarajan. Applicants respectfully submit that these claims are not rendered obvious by the suggested combination of references because:

1. the Office Action fails to identify any suggestion or teaching in the prior art supporting the suggested combination of references;
2. the Office Acton applies the wrong legal standard in evaluating obviousness; and
3. the Office Action fails to cite references upon which the Examiner relies or relies upon facts within the knowledge of the Examiner for which Applicants request an Exmanier's affidavit.

Applicants' arguments are explained in detail below.

1. The Suggested Combination Of References Is Legally Improper

The Patent Office "has the burden of showing a *prima facia* case of obviousness." *In re Mayne,* 104 F.3d 1339, 1341 (Fed. Cir. 1997). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore,* 732 F.2d 1572, 1577 (Fed. Cir. 1984). The Federal Circuit has held that "when relying on numerous references or a modification of prior art, it is incumbent upon on the Examiner to identify some suggestion to combine references or make the modification." *In re Mayne,* 104 F.3d at 1342.

With respect to combining the teachings of Norman and Elers, the Office Action states:

> However, Norman teaches that water vapor can accelerate deposition of copper from similar precursors (5, lines 45-60). Therefore, to include water in the in the **[sic]** the carrier gas would have been obvious at the time the invention was

made to a person having ordinary skill in the art with the expectation of achieving accelerated deposition.

The above quoted conclusory statement fails to meet the required standard mandated by the Federal Circuit that the Examiner must "identify some suggestion to combine references or make the modification." *Id.*

Similarly, with respect to the combination of Rangarajan and Elers, the Office Action contains a similar conclusory statement in lines 2-7 of page 3 which fails to expressly identify any suggestion or teaching in the prior art to combine these references. Accordingly, the Patent Office has failed to meet its evidentiary burden of establishing a *prima facie* case of obviousness for claims 1, 3-14, 20, 21, 23, and 24.

2. The Office Action Applies The Wrong Legal Standard Regarding Obviousness

In the first full paragraph on page 3, the Office Action concedes that "Elers fails to explicitly teach the feed times for each reactant and purge gas. The Office Action further states that "it would have been within the skill of one practicing in the art to determine the feed times required such that a uniformed monolayer is formed on the substrate and/or the reaction space is sufficiently purged." (emphasis added).

Even if the above quoted statement were true, it fails to meet the legal standard for obviousness. The phrase "one practicing in the art" fails to comport with any statutorily recognized person with respect to whom obviousness is to be decided. Obviousness is to be decided based upon the level of skill of "a person having ordinary skill in the art," not "the skill of one practicing the art." 35 U.S.C. § 103.[1] There may be people of extraordinary skill

[1] Obviousness hinges on four factual findings: "(1) the scope and content of the prior art; (2) the differences between the prior art and the claims; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness." *Metabolite Laboratories, Inc. v. Laboratory Corporation of America Holdings*, 370 F.3d 1354, 1368 (Fed. Cir. 2004)

practicing the art. Thus, the Office Action's application of an improper legal test for determining obviousness cannot serve as a basis for finding obviousness.

3. Applicants Request An Examiner's Affidavit

Patent Office Rule 104(c)(2) (37 C.F.R. § 104(c)(2)) requires that 'in rejecting claims for . . . obviousness, the examiner must cite the best references at his or her command" (emphasis added). However, in making the statement, quoted above, about what "would have been within the skill of one practicing in the art" the Office failed to cite any prior art.[2] Accordingly, it appears that the Examiner is relying upon facts within his knowledge, as provided by 37 C.F.R. § 104(c)(3). Applicants therefore respectfully request an Examiner's affidavit, pursuant to 37 C.F.R. § 104(d)(2) containing the following information:

a. all facts within the personal knowledge of the Examiner regarding the determination of feed times of the type claimed in claims 1 and 20 at the time of the invention;

b. all tests or experiments which the Examiner has directly witnessed or participated in involving the determination of feed times of the type claimed in claims 1 and 20 at the time of the invention;

c. all data within the possession, custody or control of the Examiner relating to the tests or experiments identified in response to item b, above; and

d. all facts within the personal knowledge of the Examiner which define the level of skill, education, training, and work experience in the atomic layer deposition art of "one practicing in the art" as that term is used in the Office Action.

Without cited prior art or Examiner affidavit testimony, supporting the conclusory contentions stated in the Office Action regarding "feed times" corresponding to the limitations of steps b-e of claims 1 and 20, Applicants are deprived of their right to know the relevant factual

[2] This absence of any cited prior art reference disclosing the temporal durations of the steps expressly claimed in steps b-e of claims 1 and 20 evidences the nonobviousness of these steps.

bases of this obviousness rejection. As expressly provided in Rule 104(d)(2), any affidavit submitted by the Examiner "shall be subject to contradiction or explanation by the affidavits of the applicant and other persons." Applicants reserve the right to submitting such controverting and/or explanatory testimony, upon receipt of the information requested above.

B. The Obviousness Rejection Of Claims 2 and 22

On page 3 of the Office Action, claims 2 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Elers in view of Norman, Rangarajan and Cho. Applicants respectfully submit that these claims are not rendered obvious by the suggested combination of references, for the reasons explained below.

Claim 2 depends from claim 1. Accordingly all of the arguments made in Section I(A) above with respect to the patentability of claim 1 are applicable to the patentability of claim 2. Additionally, the Office Acton fails to point out any suggestion or teaching supporting the suggested combination of Cho with the three other cited references. Accordingly, this suggested combination will not support an obviousness rejection.

Furthermore, Cho deals with a chemical vapor deposition (CVD) process, not an atomic layer deposition (ALD) process, as claimed in Applicants' invention. Cho teaches away from both:

1. the use of ALD, as claimed in claims 2 and 22; and

2. separate pulsing steps, as set forth in independent claims 1, 20 and 21.

(Exhibit A, Rule 132 Declaration of Dr. Rajendra Solanki, paras 3-7). A reference which teaches away from a claimed invention cannot render the claimed invention obvious. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Accordingly, claims 2 and 22 are not rendered obvious by the suggested combination of references. The Federal Circuit has recognized an Applicant's

right to request an Examiner's Affidavit pursuant to the rules of the Patent Office. *In re Sun*, 31 U.S.P.Q.2d 1451, 1455 (Fed. Cir. 1993) (unpublished).

II. CONCLUSION

In view of the foregoing, Applicants request a Notice of Allowance for claims 1-14, and 20-24.

Respectfully submitted,

August 17, 2004

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CERTIFICATE OF MAILING 37 CFR 1.8(a)

I hereby certify that a copy of this document along with any referred to as attached or enclosed is being deposited with the United States Postal Service as First Class mail, postage prepaid in an envelope addressed to Main Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on August 17, 2004.

Nacie Thigpen